IS 7016-13 (2003): Method of Test for Coated and Treated Fabrics, Part 13: Rubber - or Plastics-Coated Fabrics - Determination of Crush Resistance [PCD 13: Rubber and Rubber Products]

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IS 7016 (Part 13) : 2003
ISO 5473 : 1997

भारतीय मानक

लेपित एवं उपचारित कपड़े की परीक्षण पद्धतियाँ

भाग 13 रबड़- अथवा प्लास्टिक-लेपित कपड़ा – सिल्वट प्रतिरोधिता ज्ञात करना

(पहला पुनरीक्षण)

Indian Standard

METHODS OF TEST FOR COATED AND TREATED FABRICS

PART 13 RUBBER- OR PLASTICS-COATED FABRICS — DETERMINATION OF CRUSH RESISTANCE

(First Revision)

ICS 59.080.40

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

June 2003

Price Group 2

NATIONAL FOREWORD

This Indian Standard (Part 13) (First Revision) which is identical with ISO 5473:1997 'Rubber- or plastics-coated fabrics — Determination of crush resistance' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Rubber and Rubber Products Sectional Committee and approval of the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1987 aligning with ISO 5473:1979 'Rubber- or plastics-coated fabrics — Determination of crush resistance'. The Committee, therefore, decided to revise this standard to completely align with ISO 5473:1997.

The text of ISO Standard has been proposed to be approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to the following International Standards for which no Indian Standard exists.

ISO No.	*Title*
ISO 2231: 1989	Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing
ISO 2286-1: [1)]	Rubber- or plastics-coated fabrics — Determination of roll characteristics — Part 1 : Method for determination of the length, width and net mass of a roll

In case of ISO 2231 : 1989 and ISO 2286-1, the Committee, responsible for the preparation of these standards, took cognizance of these standards and decided that they are acceptable for use in conjunction with this standard.

For tropical countries like India, the standard temperature and the relative humidity shall be taken as 27 ± 2°C and 65 ± 5 percent respectively.

[1)] To be published (Revision, in Parts of ISO 2286:1986).

Indian Standard

METHODS OF TEST FOR COATED AND TREATED FABRICS

PART 13 RUBBER- OR PLASTICS-COATED FABRICS — DETERMINATION OF CRUSH RESISTANCE

(First Revision)

1 Scope

This International Standard specifies a method for determining the crush resistance of fabrics coated with rubber or plastics.

The method is applicable particularly to diaphragm material cut from coated fabrics.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2231:1989, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing.*

ISO 2286-1:—[1], *Rubber- or plastics-coated fabrics — Determination of roll characteristics — Part 1: Method for determination of the length, width and net mass of a roll.*

3 Principle

The coated fabric is subjected to a controlled load application over a known area until the fabric is crushed.

4 Apparatus

4.1 Base plate, having the dimensions shown in figure 1.

4.2 Load button assembly, having the dimensions shown in figure 2.

4.3 Compression-testing machine, having a speed of approximately 0,08 mm/s.

Any type of machine that will meet this requirement may also be used. For example, a platform scale equipped with a yoke over the platform and a hand-operated screw to apply the force will serve if it conforms to the requirements prescribed for accuracy and speed.

The load source shall have a total capacity of at least 5 400 N.

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1) To be published. (Revision, in parts, of ISO 2286:1986)

Dimensions in millimetres

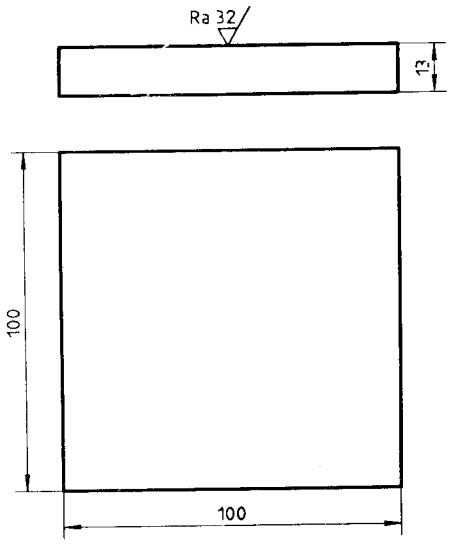
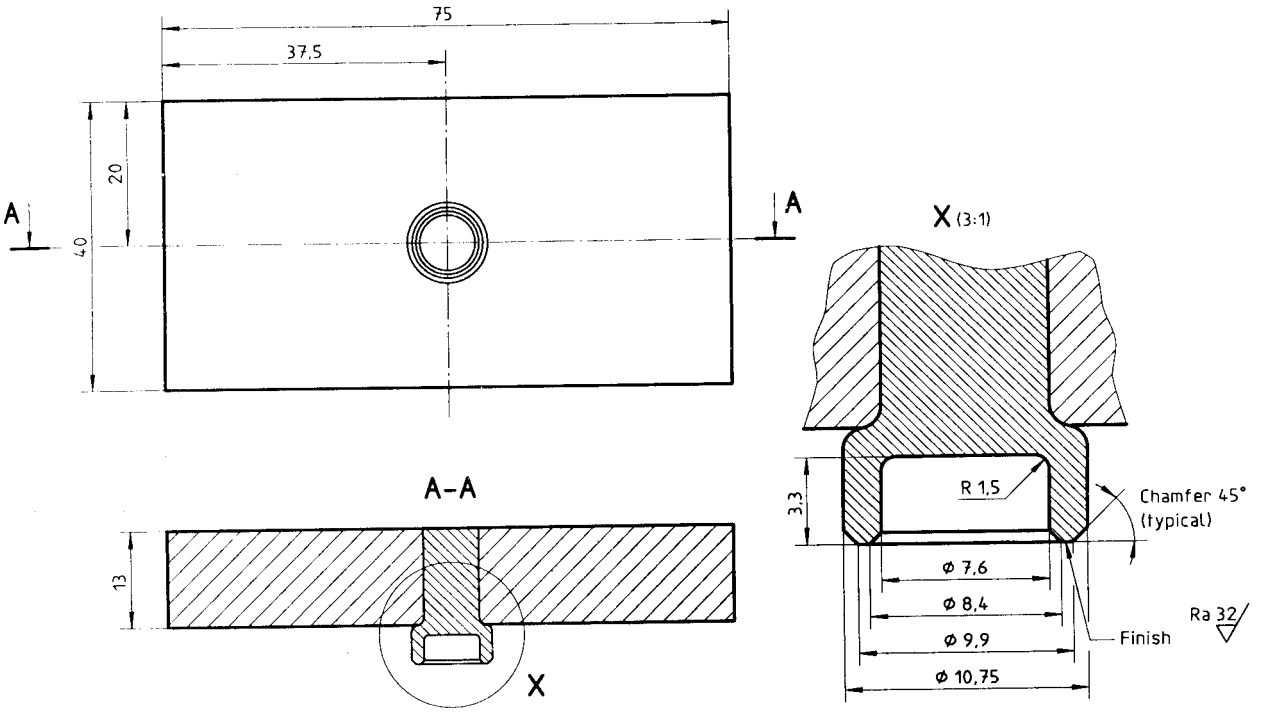


Figure 1 — Base plate

Dimensions in millimetres



NOTES

1 All sharp edges to be removed.

2 Button to be press-fitted in plate.

Figure 2 — Load button assembly

4.4 Force-recording mechanism, comprising a calibrated dial with a maximum pointer, or a strip-chart to indicate the force required to crush the fabric.

Unless otherwise specified for force determination, the machine shall be so adjusted that the maximum force required to crush the test piece may be readily detected by the maximum pointer or read from the strip-chart.

The error of the machine shall not exceed 2 % up to and including 200 N force and 1 % over 200 N force.

5 Test pieces

Cut the test pieces from the usable width of the roll as defined in ISO 2286-1.

The test pieces shall be at least 50 mm wide and 200 mm long. At least three test values shall be obtained from each sample.

6 Time-interval between manufacturing and testing

6.1 For all purposes, the minimum time between manufacturing and testing shall be 16 h.

6.2 When the test is for comparison of materials, it is strongly recommended that these periods be as close to each other as possible.

6.3 For product tests, the time between manufacturing and testing should, whenever possible, not exceed 3 months. In other cases, tests shall be made within 2 months of the date of receipt by the customer.

7 Conditioning and test atmosphere

The test pieces shall be conditioned and tested in one of the atmospheres A, B and C defined in ISO 2231.

8 Procedure

8.1 Place the base plate (4.1) on the platform of the testing machine (4.3) and place the test piece on the base plate.

If the material to be tested has an unbalanced coating, the side having the thicker coating shall be facing upward.

8.2 Place the load button of the machine on to the test piece so that the recess of the button, as shown in figure 2, is in contact with the test piece and its axis is perpendicular to the plane of the test piece. The circumference of the load button shall be at least 12 mm from any edge of the test piece. Apply the force to the button at the rate of approximately 0,08 mm/s until the shear yield point or maximum deflection of the dial pointer is reached, whichever is the lesser. Record the force required to crush the test piece. Repeat the procedure at least twice more on a new area of the test piece at least 12 mm away from other test sites and from any edge.

8.3 Fabric crushing can readily be detected by stretching the test piece. The fabric will have noticeably less resistance to stretching in the damaged areas when compared with the undamaged areas.

9 Test report

The test report shall include the following particulars:

a) a reference to this International Standard;

b) the reference and date of manufacture, if known, of each sample tested;

c) the atmosphere used for conditioning and testing;

d) the number of test pieces tested;

e) the force required to crush the coating or the fabric, whichever occurs first, in each test piece.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc: No. PCD 13 (1990).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402

Telegrams: Manaksanstha
(Common to all offices)

Regional Offices: Telephone

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002 — 2323 7617, 2323 3841

Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi, KOLKATA 700054 — 2337 8499, 2337 8561, 2337 8626, 2337 9120

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022 — 60 3843, 60 9285

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113 — 2254 1216, 2254 1442, 2254 2519, 2254 2315

Western : Manakalaya, E9 MIDC, Marol, Andheri (East), MUMBAI 400093 — 2832 9295, 2832 7858, 2832 7891, 2832 7892

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